



### City of Flagstaff Renewable Energy Efforts

The City of Flagstaff measures our progress towards renewable energy through the production and purchase of energy from renewable sources.

- The City is a member of the **Northern Arizona Renewable Purchasing Group (NAREG)** and purchases 5% of its energy from renewable resources.
  - The City of Flagstaff City Council approved a renewable energy purchase agreement with APS. This fiscal year, the city will purchase five percent of its electricity from renewable resources. This will prevent an estimated 1,900 metric tons of CO<sub>2</sub> e which equates to over 600 cars not driven for one year, or 392 average households' electricity usage. Monetary savings are over \$300,000 annually, with a final project cash flow over 10 years of more than \$250,000 and more than \$2.5 million over 15 years.
  - The initial members of this group represent some of the largest users of energy in the region. (Northern Arizona University, Coconino County, the City of Flagstaff, Coconino Community College, Flagstaff Unified School District, and Xanterra Resorts. Collectively, this group represents significant electrical demand and purchasing power in Northern Arizona.)

The City of Flagstaff offsets facility energy needs with the following renewable projects:

- **City Hall** is home to a 13 kW solar system.
- The **Cinder Lake Landfill** hosts a 1.8 kW wind accessory system.
- **Northern Arizona Center for Emerging Technologies** hosts two 2.4 kW wind accessory systems.
- **Wildcat Waste Water Treatment** facility has installed a cogeneration system that will convert methane into energy for the facility.
  - Cogeneration, also known as "combined heat and power" (CHP), allows power plants to harness waste heat while producing electricity - a technique that can greatly reduce greenhouse gas emissions.

- The cogeneration unit will combust the digester gas stream (which is high in methane content) to produce energy. The unit will produce the electricity for the wastewater treatment facility, and contribute to a large reduction of the methane emissions associated with the facility.
  - The unit is expected to achieve 9.5 metric tons of CO<sub>2</sub>e reductions in 2012 from the consumption of methane that would otherwise be released into the environment. In addition, 2.55 million kWh of electricity could be generated from this unit in year 2012, which is equivalent to a 2,628 metric ton reduction of CO<sub>2</sub>e emissions. Therefore, the combined CO<sub>2</sub>e reduction from this project will be 2,638 metric tons of CO<sub>2</sub>e.
- **The Flagstaff Aquaplex** facility incorporated a solar hot water heating system to heat the pool and provide for all domestic hot water needs for the facility.
  - The estimated heating production is 235,638 kWh.
- **Wind Ordinance** Flagstaff Sustainability Program staff collaborated with Community Development staff to permit a Wind Ordinance that allows alternate wind energy systems under ten kilowatts, to be installed on commercial and industrial zoned properties greater than a half-acre within Flagstaff city limits. This ordinance supports the City of Flagstaff's efforts to reduce greenhouse gas emissions and provide opportunities for business owners to reduce power costs through generating their own energy.
- **LEED Resolution** Flagstaff Sustainability Program staff initiated the City of Flagstaff's first effort to commit to significantly improving the efficiency of future municipal buildings. In collaboration with Development Services staff, the Resolution establishes the City of Flagstaff's Sustainable Building Policy. The policy requires all new, occupied (as defined by City building code) City buildings of any size will be designed, contracted and built to achieve certification in Leadership in Energy and Environmental Design (LEED) Program at the Silver certification level with a payback of eight years or less for the additional costs of achieving LEED achievement.
- **ENERGY STAR Partnership** In 2008, the City of Flagstaff became an ENERGY STAR Partner. As a partner the City has committed to report energy and water consumption in all municipal facilities to the U.S. Department of Energy. The Flagstaff Sustainability Program is responsible for measuring and tracking the organization's energy performance. The data tracking will provide the City with its first energy management system. This organizational approach to energy management will enhance the City's financial health and reduce greenhouse gas emissions.

- **Solar and Wind Energy Tour** The Flagstaff Sustainability Program collaborated with the Coconino County Sustainable Building Program to organize the Solar and Wind Energy Tour, a free educational event. More than 300 community members participated in the self-guided tour. The 2008 tour showcased 14 residences and businesses and offered the public an interactive opportunity to learn about renewable energy. The tour is a collaborative effort between Coconino County Sustainable Building Program, City of Flagstaff Sustainability Program and Willow Bend Environmental Education Center.
- **Renewable Energy Policy** The Flagstaff Sustainability Program has drafted a renewable energy policy that is awaiting approval.
- **Renewable Energy Audit** The Flagstaff Sustainability Program is in the process of completing a renewable energy audit of all City of Flagstaff facilities and property for small and large scale project potential.